EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-15

☐ Other ☐ Amendment Number:

Contract Number	Contract Period	Title of Work Assignment/SF Site Name
EP-D-11-006	04/29/2011 To 03/31/2014 Base Option Period Number 2	Characterization of ICI Boiler

Contractor	Specify Section and paragraph of Contract SOW
EASTERN RESEARCH GROUP, INC.	II, K

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 11/01/2013 To 03/31/2014

Comments:
This work assignment includes hours for the preparation of the work plan/cost estimate and hours to begin the work assignment. The contractor shall propose hours necessary to complete all tasks. No previously performed work shall be duplicated. See attached SOW.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code (Max 7)
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

	Cost/Fee:	LOE:
Contract Period: 04/29/2011 To 03/31/2014		0
This Action:		200
Total:		200

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: David Misenheimer (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-5473	
	FAX Number:	
Project Officer Name: Karen C. Watson (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-3114	
	FAX Number:	
Other Agency Official Name (Signature) (Date)	Branch/Mail Code:	
	Phone Number:	
	FAX Number:	
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code:	
	Phone Number: 919-541-3112	
	FAX Number:	

Statement of Work

I. Title: Characterization of ICI Boiler NOx Controls
Contractor Name: ERG
Contract #: EP-D-11-006

WA #: 3-15

II. Work Assignment Manager (WAM):

WAM Name: David Misenheimer
U.S. Environmental Protection Agency
OAQPS / HEID (C439-02)
Research Triangle Park, NC 27711
Phone: (919) 541-5473

III. Background: When developing regulations, EPA uses control measure information to assess the effectiveness of various control options and to estimate the potential costs. EPA is currently involved in a rulemaking effort addressing transported ozone under the "good neighbor" provision, section 110(a)(2)(D)(i) of the Clean Air Act, for the eastern half of the United States. For this rulemaking, we need to develop best available estimates of control costs and available reductions to inform the identification of upwind states' "significant contribution" to downwind nonattainment.

The purpose of this Work Assignment (WA) is to conduct a control strategy analysis of the potential application of NOx controls to Industrial / Commercial / Institutional (ICI) Boilers in the eastern U.S. and to estimate the resulting emissions reductions and costs. The goal of this work assignment is to ensure the overall credibility of current emissions reduction estimates and cost estimates associated with these reductions. In addition, this WA includes a sensitivity analysis of the conversion of a portion of coal and oil fired boilers to natural gas and the impact such a conversion would have on the results of the control strategy analysis.

IV. Description and Tasks:

Task #1: Work Plan

The Contractor shall develop a new work plan. The Contractor shall hold conference calls with the WAM on at least a biweekly basis after approval of the work plan to plan and review progress of this WA.

Task #2: Estimate Emission Reductions and Costs that would result from ICI Boiler Controls being applied in 37 Eastern States

The WAM will provide the Contractor with a dataset of the latest NEI emissions information for the 37 Eastern States. The Contractor will apply ICI Boiler NOx control and cost equations and methods developed by ERG under a previous Work Assignment (Contract EPD11006, W.A. 2-06 "ICI Boiler Control Measures") to the NEI dataset to prepare a "control strategy" emission inventory.

The Contractor will identify sources with existing controls that are not reflected in the cost calculations (for which costs would likely be underestimated, and emissions reductions overestimated). To identify such sources, the Contractor will review available information such as the ICI boiler MACT ICR data base, state permits, continuous monitoring data reported to EPA or states, whether sources are located in nonattainment counties with NOx rules, and other readily available information. Where sources are known to have or are likely to have existing controls already in place, the Contractor will revise the control strategy results to remove controls applied by CoST to such sources.

The Contractor will also review the results to identify likely erroneous emission reductions or costs based on the Contractor's knowledge of emission reductions and costs expected for various types and sizes of ICI Boilers and will modify the control strategy results to correct any such erroneous emission reductions or costs.

The Contractor will prioritize the efforts described above on boiler sizes and types that are the greatest contributors to the overall NOx emissions inventory, and on boiler sizes and types that have the greatest likelihood for cost-effective controls.

The Contractor will also address whether it is feasible and useful to calculate the NOx lb/MMBTU for boilers by using combined information from the NEI and from greenhouse gas reporting program data.

Deliverables Under Task 2

2a Control Strategy dataset of source by source application of controls and resulting emission reductions and costs, based on the latest National Emissions Inventory (NEI) reflecting corrections described above.

2b Documentation of the methodology and inputs used to prepare the control strategy dataset, issues encountered, and resolution of issues.

2c Recommended corrections to ICI Boiler NOx emissions information in the control strategy prepared in Task 2 which could be solicited by EPA from commenters on the Transport Rule.

Task #3: Prepare Base Case Sensitivity Analysis of Conversion of a Portion of Coal and Oil Fired ICI Boilers to Natural Gas

The WAM will provide the Contractor with pertinent studies identifying the portion of boilers for which it would be less costly to switch to natural gas from current fuels such as coal or residual oil, as compared to compliance with the ICI boiler MACT. The Contractor shall use the information to conduct a sensitivity analysis of the effects of such fuel switching on NOx emissions. The sensitivity analysis will estimate the 2018 base case emissions reductions that would occur if (1) all such sources switched fuels and (2) a more moderate fraction of such sources switched fuels. The sensitivity analysis results will be estimated for the 37 Eastern States as a whole and also by individual States. In addition, the Contractor shall also report if readily available the effects of such fuel switching on other pollutant emissions from ICI boilers, such as SO2, PM2.5, Hg, and CO2.

Deliverables Under Task 3

3a Documentation of the procedures used in the conduct of this analysis
3b Dataset of ICI Boiler NOx emissions resulting from the sensitivity analysis, summarized by State for the 37 Eastern States
3c State by state summary of the impact the conversion would have on the control strategy prepared in Task 2

V. QA Requirements: To identify and eliminate errors introduced during data preparation, the Contractor shall perform quality control (QC) of the data prior to delivering data sets to the WAM. The Contractor shall include a statement in the final report that confirms that the data is appropriate for the intended use. Also, the Contractor shall identify in the final report the sources of the data, any existing quality assurance (QA) information about the data (i.e., QA that was performed at the time the data were originally prepared), and the location of the QA information.

VI. Deliverables:

The Contractor shall adhere to the following schedule:

Task	Deliverable	Delivery Schedule
1	Work Plan	20 days after effective date of WA
2	Provide documentation and datasets	

described in Tasks 2 and 3 January 15, 2014

VII. Reporting Requirements:

The Contractor shall provide monthly progress reports in accordance with the terms of the contract. The Contractor shall submit work products in electronic as well as hard copy form. In addition, the Contractor shall deliver to the WAM each draft and final report in electronic format that is readable by windows-based word-processing (Microsoft Word 2007), graphics (Microsoft PowerPoint 2007), and spreadsheet (Excel 2007) programs. The Contractor shall also provide electronic copies of reports in PDF format. The Contractor shall provide the datasets in Excel 2007 or Access 2007 format, to be decided in consultation with the WAM. The Contractor shall ensure that all electronic work products are free of computer viruses, malware, or spyware.

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Work Assignment

Work Assignment Number: 3-15

☐ Other ☒ Amendment Number: 000001

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EP-D-11-006	04/29/2011 To 03/31/2014 Base Option Period Number 2	Characterization of ICI Boiler

Contractor: EASTERN RESEARCH GROUP, INC.

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 11/01/2013 To 03/31/2014

Comments:
This amendment changes the Work Assignment Managers as detailed in the attached. There are no other changes.

This amendment is in accordance with CMM 7.3.5.1(D).

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

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Contract Period:	Cost/Fee:	LOE:
04/29/2011 To 03/31/2014		
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Total:		

Work Plan / Cost Estimate Approvals

	Cost/Fee:	LOE:
Contractor WP Dated:		
Cumulative Approved:		

Work Assignment Manager Name: Tim Smith (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-4718 FAX Number:
Project Officer Name: Karen C. Watson (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3114 FAX Number:
Other Agency Official Name: (Signature) (Date)	Branch/Mail Code: Phone Number: FAX Number:
Contracting Official Name: Rodney-Daryl Jones (Signature) (Date)	Branch/Mail Code: Phone Number: 919-541-3112 FAX Number:

EPD-11-006, ERG

Work Assignment 3-15
Amendment 1

Work Assignment Managers (WAM):

WAM Name: Tim Smith
U.S. Environmental Protection Agency
OAQPS / AQPD (C539-04)
Research Triangle Park, NC 27711
Phone: (919) 541-4718

Alt. WAM Name: David Misenheimer
U.S. Environmental Protection Agency
OAQPS / HEID (C439-02)
Research Triangle Park, NC 27711
Phone: (919) 541-5473

EPA

United States Environmental Protection Agency
Washington, DC 20460

Work Assignment

Work Assignment Number: 3-15

☐ Other ☒ Amendment Number: 000002

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Period of Performance: From 11/01/2013 To 03/31/2014

Comments:
The purpose of this work change is to increase the budget ceiling to $34,748.00. This document is IAW the CMM 7.3.5.1(d)

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